STUDY ON THE SHEAR STRENGTH PARAMETERS OF FIBRE REINFORCED SOIL (PALM OIL & COCONUT FIBRE)

By

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Report is submitted as
the requirement for the degree
Bachelor Engineering (Hons) (Civil)

UNIVERSITI TEKNOLOGI MARA
NOVEMBER 2006

DECLARATION BY THE CANDIDATE

I, Ahmad Azmi Bin Ahmad, UiTM No. 2002251884 confirms that the work is my own and that appropriate credit has been given where reference has been made to the work of others.

(Signature of candidate and date)

ACKNOWLEDGEMENT

No assignment can be done without help from others. I would like publicly to thank those who have wittingly or unwittingly lent support to this venture and to us. The work reported in this thesis has been carried out under the supervision of Mr. Anas B Ibrahim lecturer in UiTM, Penang. He gives a lot of valuable, important information and also valuable guidance in planning, execution and reporting of this study and his keen interested in the progress of work throughout the investigation. I also profited by suggestions from the assistance of other lecturer to that give us a motivation, encouragement and valuable information about a topic for this assignment.

The author is indebted to the Head of Department of Civil Engineering and Coordinator of Final year Project for their help and moral support.

Thanks are due to the staff of Geotechnical Engineering Laboratory for prompt help in carrying out the experimental investigation.

Finally, I would like to thank our whole classmate, for their involvement. They are some who must be acknowledged for other kinds of support. Thank you very much to the entire person that already mention above and also to those who are not stated in this acknowledgement.

ABSTRACT

Geotechnical failures are one of the major problems in design and construction work in Malaysia, generally. This is because general properties of the soil such as strength and bearing capacity can be classified as very loose and weak. For effective and economical, some research in protecting and improving the quality of this type of soil needed. Reinforced Earth Technique is one of the methods to improving the strengths of the soils. It was systematically introduced by a French scientist H. Vidal in 1966. Reinforced Earth is a composite material which is formed by the association of soil and tension resistant reinforcing elements in the form of sheet, strips, nets or mats of metal, synthetic fabrics of fibre-reinforced plastics and arranged in the soil mass in such a way that reinforcement reduces or suppresses the tensile strain which might develop under gravity or boundary forces.

Insertion of reinforcing elements in the soil mass modifies the strength of soil, which in shear strength tests appear either as an increased friction angle or cohesion intercept of Mohr envelope. The load deformation response of a reinforced soil can therefore be expected to be an improvement over the unreinforced soil. Keeping in view the above facts, a basic study was carried out in laboratory to study the effect of different percentage of fibres on the shear strength of soil by conducting direct shear tests and triaxial compression test. The effect of various percentages of two different types of fibres was studied by conducted two different test and soil types.

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